ABSTRACT

COMPARISON OF HOLT WINTER'S EXPONENTIAL SMOOTHING AND ARIMA METHODS IN FORECASTING DATA ON THE NUMBER OF VISITORS AT LOKAWISATA BATURRADEN

By

Nadia Putri Anggraeni

20110024

Banyumas Regency has a number of interesting tourist attractions that are worth visiting in the area. One of the leading tourist attractions, namely Lokawisata Baturraden, has so much natural wealth and beauty that many visitors come every year. Based on data on the number of visitors obtained from the Baturraden Tourism Office for 2014-2023*, the number of visitors always increased in the first five years. In* 2018*, the number of visitors to the Baturraden Lokawisata increased by* 715663 *people. In* 2019*, the number of visitors to the Baturraden Lokawisata decreased due to Covid-*19*. Based on this, it is necessary to forecast the number of visitors at Baturraden Lokawisata for the next one year period to assist the Baturraden Lokawisata authorities in managing lokawisata and improving services to visitors. The time series method is used to predict the number of visitors at the Baturraden Lokawisata in this research, namely Holt Winter's Exponential Smoothing (HWES) additive and ARIMA. Selecting the best model from these two methods, namely selecting the model with the smallest RMSE and MAD values. With the help of R Studio software, in the additive HWES model the best model was obtained with parameters* $\alpha = 0.2$; $\beta = 0.1$ *and* $\gamma = 0.2$ *where the RMSE value is* 72.04 *and MAD* 52.33*. Meanwhile, the ARIMA model obtained the best model, namely ARIMA*(7, 1, 7) *with RMSE values of* 52.19 *and MAD* 43.71*. Next, compare the two models which have the smallest RMSE and MAD values so that the best model is obtained, namely ARIMA*(7, 1, 7) *to predict the number of visitors at Baturraden Lokawisata for the period* 2024*. The results of forecasting the number of visitors at the Baturraden Lokawisata in 2024 have a MAD value of 43.71.*

Keywords : ARIMA; Holt Winter's Exponential Smoothing; Forecasting; Time Series; Number of visitors;